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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,928	10/27/2003	Ian Andrew Maxwell	304122000600	5095
25226	7590	12/21/2005		
MORRISON & FOERSTER LLP 755 PAGE MILL RD PALO ALTO, CA 94304-1018				
			EXAMINER DUPUIS, DEREK L	
			ART UNIT 2883	PAPER NUMBER

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/694,928	MAXWELL ET AL.	
	Examiner	Art Unit	
	Derek L. Dupuis	2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 and 28-67 is/are pending in the application.
- 4a) Of the above claim(s) 1-24, 29-32 and 49-65 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25, 26, 28, 33-48, 66 and 67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/18/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 17 of remarks, in combination with the amendments to the drawing, the specification, and to the claims filed 10/20/2005, with respect to the objection to the drawings, the objection to the specification, and the objection to claim 25 have been fully considered and are persuasive. The objection to claim 25, the objection to the drawings, and the objection to the specification have been withdrawn.
2. Applicant's arguments, see page 18 of the remarks, in combination with the amendments to the claims filed 10/20/2005, with respect to the rejection of claims 25 and 45 under 35 U.S.C. 112, second paragraph, have been fully considered and are persuasive. The rejection of claims 25 and 45 under 35 U.S.C. 112, second paragraph, has been withdrawn.
3. Applicant's arguments filed 10/20/2005 have been fully considered but they are not persuasive.
4. With regards to the remarks on pages 18-20, the examiner respectfully disagrees with the applicant's argument that Sun et al fail to disclose a lens capable of focusing light in a plane parallel to the substrate with a face perpendicular to the substrate as recited in amended claim 25. As can be seen in figure 5B of Sun et al, the lens is clearly capable of focusing light in a plane parallel to the substrate. In the figure, light is being focuses from an emission area (44) into the waveguide. The waveguide is in a plane that is parallel to the substrate as can be seen in the figure. Furthermore, the lens has a face that is perpendicular to the substrate. The limitation cited in the claim is that the "lens has a face" perpendicular to the substrate. The apex of the curved lens is considered a face that is perpendicular to the substrate. Although the apex is

extremely small, it never-the-less constitutes a face of the lens and is perpendicular to the substrate.

5. The applicant's amendment has cancelled claim 27. Claims 25, 28, and 45 were amended and claims 66 and 67 are new.
6. Claims 1-24, 29-32, and 49-65 stand withdrawn.
7. The examiner has maintained the rejection made in the previous office action. This rejection is repeated below. Modification made to the rejection were necessitated the new limitations introduced by the applicant in the amendment to the claims. This rejection is made FINAL.

Information Disclosure Statement

8. The information disclosure statement (IDS) submitted on 11/18/2005 was filed after the mailing date of the first action on the merits on 6/30/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

9. The drawings were received on 10/20/2005. These drawings are accepted by the examiner.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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11. Claims 25, 26, 28, 33, 34, 41-43, and 66 are rejected under 35 U.S.C. 102(b) as being anticipated by *Sun et al (US 5,432,877)*.

12. Sun et al teach an integrated optical waveguide shown in figure 4D and 5B. The waveguide comprises a substrate (30), a lower cladding layer (32), a light transmissive element (34) and a patterned upper cladding (36). The patterned upper cladding is arranged on the light transmissive element (34) in such a way so that at least a portion (42) of the light transmissive element (34) has an air clad region at one end of the waveguide. The light transmissive element comprises a waveguide and a lens as a unitary body (see abstract). The apex of the lens is a face that is perpendicular to the substrate as shown in figure 5B. The lens focuses light into the waveguide as shown in figure 5 in a plane that is parallel to the substrate. As shown in figure 4D the lens has an air clad curved surface (42) on both top and bottom portions of the light transmissive element. As shown in figure 1B, the back portion of the light transmissive element extends to the same location as the back portion of the upper cladding. In this respect, the portion of the upper cladding "matches" the portion of the light transmissive element. Sun et al also teaches that the substrate can comprise silicon (see column 3, lines 16-49).

13. Claims 41 and 42 are **product-by-process claims**:

Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Thorpe*, 227 USPQ 964, 966; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and *In re Marosi et al.*, 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 2113.

14. Claims 41 and 42 do not distinguish over the Sun et al reference regardless of the process used to remove the dielectric material, because only the final product is relevant, and not the

process of making such as patterned by selectively curing with a patterned heat source or with a patterned source of ultraviolet light.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claims 35-40, 44-48, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Sun et al (US 5,432,877)* as applied to claims 25, 26, 28, 33, 34, 41-43, and 66 above, and further in view of *Ghoshal et al (US 6,832,036 B2)*.

17. Sun et al do not teach that the upper cladding or the lower cladding comprise a polymeric material such as siloxane polymer or that the material is thermally curable or curable by actinic radiation. Ghoshal et al teach an integrated optical waveguide with a light transmitting core and with a lower and an upper cladding. Ghoshal et al teaches that the claddings and the core can comprise a siloxane polymer and that the polymer can be cured by actinic radiation with UV light or by thermal curing (see column 2, line 25 to column 4, line 52). Ghoshal et al also teach that the substrate can be made from materials such as glass, silica, ceramics, quartz, crystalline materials, or plastics. Polymers such as PET are well known and routinely used plastics used in the semiconductor art.

18. It would have been obvious to one of ordinary skill in the art at the time of invention to make the claddings and core taught by Sun et al out of a siloxane polymer as taught by Ghoshal et al. Motivation to do this would be the desirability of the high refractive index contrast

between the siloxane polymer core and the siloxane polymer claddings and the compatibility with silicon processing requirements (see abstract).

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

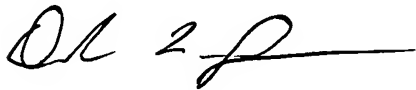
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek L. Dupuis whose telephone number is (571) 272-3101. The examiner can normally be reached on Monday - Friday 8:30am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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